

Amendments to the Claims:

This listing of claims replaces all prior versions, and listings, of claims in the application:

1. (currently amended) A communication device for transmitting signals to a receiver comprising:

at least one laser adapted to generate coherent light simultaneously at multiple wavelengths and different frequencies;

said receiver including at least one detector adapted to detect said coherent light at multiple wavelengths and different frequencies;

said at least one laser and said at least one ~~receiver not detector~~ being positioned in out of line-of-sight relation to one another;

said at least one laser positioned at a first fixed location and said at least one detector positioned at a second fixed location remote from said first fixed location;

a barrier between said at least one laser and said at least one detector, said barrier causing said at least one laser and said at least one detector to be in said out of line-of-sight relation to one another;

a plurality of external remote targets and target spatial regions fixed in line-of-sight relation to said at least one laser and in line-of-sight relation to said at least one detector;

said external remote targets and target spatial regions including trees, buildings, clouds, atmospheric aerosols, and like objects that are out-of-doors relative to said at least one laser;

a modulating device connected in modulating relation to said at least one laser;

said modulating device adapted to modulate each of said multiple wavelengths so that multiple messages are transmitted simultaneously;

said communication device adapted to aim said modulated light from said at least one laser at said plurality of external remote targets and target spatial regions to separate spatially different communication optical signals from one another;

said at least one detector adapted to demodulate light scattered by said target;

said at least one detector including an optical bandpass filter adapted to pass preselected wavelengths of light and reject wavelengths of light outside of said preselected wavelengths;

whereby multiple messages are simultaneously transmitted along multiple wavelengths and different frequencies; and

whereby said multiple messages are individually detected by said at least one detector;
~~and;~~

~~whereby at least one laser beam follows a generally "V"-shaped path of travel between said at least one laser and said at least one detector.~~

2. (cancelled)

3. (cancelled)

4. (cancelled)

5. (cancelled)

6. (currently amended) A communication device adapted to reflect signals from a light reflecting target, comprising:

a first data communication device adapted to transmit multiple sets of data through multiple wavelengths, there being as many wavelengths as there are sets of data;

a laser source modulated by said first data communication device;

a transmitter telescope adapted to aim modulated light of said multiple wavelengths from said laser source to a plurality of light-reflecting multiple external remote targets;

said plurality of light-reflecting multiple external remote targets including trees, buildings, clouds, atmospheric aerosols, and like objects that are out-of-doors relative to said first data communication device;

a second data communication device adapted to receive multiple sets of data carried by said multiple wavelengths;

an optical detector connected in driving relation to said second data communication device, said optical detector adapted to generate electrical signals corresponding to detected optical signals;

a receiving telescope ~~aimed at said plurality of light-reflecting external remote targets and~~ adapted to collect modulated light reflected from said plurality of light-reflecting external remote targets at said multiple wavelengths and to deliver said modulated light to said optical detector;

an optical bandpass filter connected between said receiving telescope and said optical detector;

a barrier means adapted to be positioned between said first and second data communication devices, said barrier means preventing line-of-sight communication between said first and second data communication devices;

said communication device being adapted to aim said modulated light from said laser at said plurality of external remote targets to separate spatially different communication optical signals from one another;

said transmitter telescope causing modulated light at multiple wavelengths to reflect from said plurality of light-reflecting external remote targets;

said receiver telescope causing reflected light at said multiple wavelengths to focus on said optical detector;

said second data communication device receiving electrical signals from said first data communication device; and

said first data communication device positioned at a first fixed location and said second data communication device positioned at a second fixed location remote from said first fixed location; and

said optical bandpass filter passing each of said multiple wavelengths to said optical detector so that multiple messages are sent simultaneously from said first data communications device to said second data communications device.

7-11. (cancelled)

12. (withdrawn) A communication device adapted to be disposed in an enclosure having walls and a ceiling, comprising:

a first data communication device adapted to transmit data;

a laser source modulated by said first data communication device;

said laser source adapted to generate light at multiple wavelengths;

a first optical lens means having a π to 2π steradians field of view, said first optical lens means being positioned in light dispersing relation to said laser source;

a second data communication device adapted to receive data;

an optical detector connected in driving relation to said second data communication device, said optical detector adapted to generate electrical signals corresponding to detected optical signals;

said optical detector adapted to detect light at multiple wavelengths;

a second optical lens means having a π to 2π steradians field of view, said second optical lens means being positioned in light focusing relation to said optical detector;

a barrier means adapted to be positioned in said enclosure between said first and second data communication devices, said barrier means preventing line-of-sight communication between said first and second data communication devices;

an optical bandpass filter connected between said second optical lens means and said optical detector;

whereby said first optical lens means causes modulated light at multiple wavelengths to reflect from said ceiling and walls of said enclosure;

whereby said second optical lens means causes reflected light at said multiple wavelengths to focus on said optical detector; and

whereby said second data communication device receives electrical signals at said multiple wavelengths from said first data communication device.

13. (withdrawn) The communication device of claim 12, wherein said first optical lens means is a hemispherical short focus lens.

14. (withdrawn) The communication device of claim 12, wherein said first optical lens means is provided in the form of transmitter optics.

15. (withdrawn) The communication device of claim 12, further comprising electrical signal conditioning means electrically connected between said first data communication device and said laser source.

16. (withdrawn) The communication device of claim 12, wherein said second optical lens means is a hemispherical short focus lens.

17. (withdrawn) The communication device of claim 12, further comprising electrical signal conditioning means electrically connected between said optical detector and said second data communication device.

18. (currently amended) A communication device adapted to reflect signals from remote targets positioned in an environment external to the environment of the communication device, comprising:

said remote targets including trees, buildings, clouds, atmospheric aerosols, and like substantially stationary objects in said environment external to the environment of the communication device;

a first data communication device adapted to transmit data;

a laser source modulated by said first data communication device;

a transmitter telescope adapted to aim modulated light from said laser source to a remote target positioned in said environment external to the environment of said communication device;

a second data communication device adapted to receive data;

said first and second data communication devices ~~not~~ being positioned in out of line-of-sight relation to one another;

an optical detector connected in driving relation to said second data communication device, said optical detector adapted to generate electrical signals corresponding to detected optical signals;

a receiving telescope adapted to collect modulated light reflected from said remote target and to deliver said modulated light to said optical detector;

a barrier means adapted to be positioned between said first and second data communication devices, said barrier means preventing line-of-sight communication between said first and second data communication devices;

said first data communication device being adapted to aim said modulated light from said laser at said remote targets to separate spatially different communication optical signals from one another;

said transmitter telescope causing modulated light to reflect from said remote targets;

said receiving telescope causing reflected light to focus on said optical detector; ~~and~~

said first data communication device positioned at a first fixed location and said second data communication device positioned at a second fixed location remote from said first location;
and

said second data communication device receiving electrical signals from said first data communication device.

19. (original) The communication device of claim 18, further comprising an optical bandpass filter connected between said receiving telescope and said optical detector.

20. (currently amended) A LIDAR communication system, comprising:

a laser adapted to generate a LIDAR beam;

a data transmitting device for modulating said laser;

a transmit telescope adapted to aim said LIDAR beam at a remote target;

a receiver telescope adapted to collect said LIDAR beam after said LIDAR beam has reflected from said remote target;

an optical detector means in communication with said receiver telescope, said optical detector means adapted to generate electrical signals upon receiving reflected light from said receiver telescope;

a data receiving device adapted to receive electrical signals from said optical detector;

said data transmitting device and said data receiving device ~~not~~ being positioned in out of line-of-sight relation to one another;

said LIDAR communication system being adapted to aim said modulated light from said LIDAR beam at a plurality of external remote targets and target spatial regions to separate spatially different communication optical signals from one another;

said external remote targets and target spatial regions including trees, buildings, clouds, atmospheric aerosols, and like substantially stationary objects that are out-of-doors relative to said laser;

said data transmitting device positioned at a first fixed location and said data receiving device positioned at a second fixed location remote from said first fixed location; and

said data receiving device receiving data from said data transmitting device even when said data receiving device is positioned in a location distant from said data transmitting device and when at least one obstacle prevents line-of-sight communication between said data transmitting device and said data receiving device;

whereby said LIDAR beam follows a generally "V"-shaped path of travel from said laser to said data receiving device.

21. (original) The LIDAR communication system of claim 20, further comprising:

an electrical signal conditioner disposed in electrical communication between said data transmitting device and said laser, said electrical signal conditioner adapted to condition signals from said data transmitting device.

22. (original) The LIDAR communication system of claim 20, further comprising:

an electrical signal conditioner disposed in electrical communication between said optical detector and said data receiving device, said electrical signal conditioner adapted to condition electrical signals from said optical detector.

23. (original) The communication device of claim 20, further comprising an optical bandpass filter between said receiver telescope and said optical detector.

24. (previously presented) The communication device of claim 18, further comprising multiple optical wavelengths for communication of different communication signals simultaneously when the same external remote target is used as a common target for multiple communication devices.

25. (previously presented) The communication device of claim 18, further comprising multiple optical wavelengths for communication of different communication signals simultaneously when the same external remote target is used as a common target for LIDAR communication devices.

26. (previously presented) The communication device of claim 20, further comprising multiple optical wavelengths for communication of different communication signals simultaneously when the same external remote target is used as a common target for multiple communication devices.

27. (previously presented) The communication device of claim 20, further comprising multiple optical wavelengths for communication of different communication signals simultaneously when the same external remote target is used as a common target for LIDAR communication devices.

28-29. (cancelled)

30. (previously presented) The communication device of claim 18, further comprising an optical signal transmitted to a remote external target wherein the backscattered optical signal is detected simultaneously by multiple telescope receivers positioned at different locations.

31. (previously presented) The communication device of claim 18, further comprising a common optical signal transmitted to a remote external target wherein the backscattered optical signal is detected simultaneously by multiple telescope receivers positioned at different locations.

32. (previously presented) The communication device of claim 20, further comprising an optical signal transmitted to a remote external target wherein the backscattered optical signal is detected simultaneously by multiple telescope receivers positioned at different locations.

33. (previously presented) The communication device of claim 20, further comprising a common optical signal transmitted to a remote external target wherein the backscattered optical signal is detected simultaneously by multiple telescope receivers positioned at different locations.

34. (canceled)

35. (canceled)

36. (previously presented) The communication device of claim 1, further comprising:
a plurality of external remote targets including atmospheric backscatter in non-line-of-sight relation to said detector;
said detector adapted to detect multipath backscatter from said multiple backscatter spatial target regions.